

# EXHIBIT AA

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF INDIANA  
SOUTH BEND DIVISION

IN RE: BIOMET M2a-MAGNUM HIP )  
IMPLANT PRODUCTS LIABILITY ) No. 3:12-md-2391-  
LITIGATION (MDL 2391) ) RLM-MGG  
)  
THIS DOCUMENT RELATES TO ALL )  
CASES )  
)

The videotaped deposition of DAVID  
SCHROEDER, called for examination, taken pursuant to  
the Federal Rules of Civil Procedure of the United  
States District Courts pertaining to the taking of  
depositions, taken before JULIANA F. ZAJICEK, CSR No.  
84-2604, at Suite 300, 100 East Wayne Street, South  
Bend, Indiana, on June 29, 2017, at 9:20 a.m.

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1 why there are varying -- it's a relationship of  
2 contact stress and form errors in the devices.

3 Q. But some of the cup and head sizes of  
4 these devices overlap. For example, the Magnum can be  
5 made as small as 38 for the femoral head size and the  
6 M2a-Taper, you know, is smaller, but ranges from --  
7 well, the cup size from the M2a-Taper ranges as large  
8 as 70 millimeters. So if there is some overlap  
9 between cup and head sizes, why would the diametrical  
10 clearance still be so much greater for the -- the  
11 Magnum versus, say, the 38?

12 A. So you are misunderstanding the chart  
13 then.

14 So a M2a-Taper has a cup size that's 78,  
15 or 70 millimeters, but it still has a 28-millimeter  
16 bearing surface inside of there.

17 Q. Right. And I know that the M2a-38 has a  
18 standard size for the -- the femoral head and then the  
19 cup has that -- that same inside diameter and then  
20 it's the outside diameter that changes, right --

21 A. Say that --

22 Q. -- the mere thickness?

23 A. Yes, correct.

24 Q. Okay. So in your -- in your view, do

1 the -- do the diametrical clearances change at all for  
2 the different sizes of the heads and cups for, for  
3 example, the M2a-Magnum?

4 A. Within the M2a-Magnum, those sizes, the --  
5 it didn't step up. It stayed the same between those.  
6 So for the entire M2a-Magnum range, if I remember  
7 correctly, it's 150 to 300-micron.

8 Q. Okay. Whether -- whether you are dealing  
9 with a 38-millimeter head or a 60-millimeter head?

10 A. Correct.

11 Q. Okay. It's not that a 38-millimeter head  
12 in a Magnum would be closer to the 150-micron range?

13 A. It would not be.

14 Q. They would all be within that same range.

15 Do you believe that the larger diametrical  
16 clearance on the M2a-Magnum produced lower wear rates  
17 than the -- the smaller diametrical clearance on the  
18 M2a-38?

19 A. I don't think that it created lower. I  
20 think it's because -- I mean, when you go to the  
21 larger head diameters, even at the higher clearances,  
22 your effective radius and your contact stresses are  
23 lower than what you still have in the M2a-38.

24 Q. Can you say that again for me?

1 A. So, one of the things when you talk about  
2 the varying clearances is that one way to try and  
3 discuss what the effect of that clearance is, is to do  
4 what's called an effective radius. And what that does  
5 is it looks at effectively if you were to take a -- a  
6 flat surface and you put a ball on top of that flat  
7 surface, what -- what radius would it be so that you  
8 effectively would have the same contact stress that  
9 you have in a ball and socket joint.

10 Does that make sense so far?

11 Q. I'm with you.

12 A. Okay.

13 So if you take a larger diameter, even  
14 though it has a higher clearance, it may have a --  
15 it's not necessarily the clearance. It's the fact  
16 that we can get a higher effective radius which in  
17 turn reduces the contact stress. So you are  
18 apparently -- it's -- it's a -- you are making sure  
19 that you have enough clearance so that you don't get  
20 equatorial loading because of form errors -- we can  
21 talk about that if you want to -- and getting the  
22 contact stresses as low as possible.

23 Q. So in your opinion, the larger clearances  
24 for the M2a-Magnum do not necessarily translate into

1 larger or lesser amounts of wear compared to the 38?

2 MR. CONWAY: Objection; vague.  
3 BY THE WITNESS:

4 A. It -- it's not as simple as the clearances  
5 would give you that. I mean, you are changing  
6 multiple things at the same time. You are changing  
7 diameters also. There is issues of sphericity. I  
8 just -- it's not that simple.

9 BY MR. DAVIS:

10 Q. Okay. But so -- so -- but you -- you are  
11 agreeing with me that -- that we can't just look at  
12 clearance, using the -- just clearance alone does not  
13 make the Magnum a --

14 A. Just clearances?

15 Q. -- device subject to -- to lesser wear?

16 A. Just clearance alone, no.

17 Q. Okay. Would there have been a way to  
18 create the M2a-Magnum and ReCap with a diametrical  
19 clearance identical to the M2a-38, could that have  
20 been done?

21 A. Could it have been done? I suppose we  
22 could have manufactured it.

23 Q. Why would that not have been a good idea?

24 A. When you go to the larger components, and

1 the Magnum shell is also a slightly thinner shell, you  
 2 want to make sure that if there is any deformation  
 3 that you are not going to get equatorial loading. So  
 4 you want to have more -- a little bit larger clearance  
 5 so that if there is any deformation in putting these  
 6 components in, that you are not going to get  
 7 equatorial loading.  
 8 Q. And that's one of the reasons that you  
 9 believe the ASR was so failure prone, because it had a  
 10 very thin shell, correct?  
 11 MR. CONWAY: Objection; I don't think there is  
 12 any foundation for that question. I don't think he  
 13 has ever said that.  
 14 But he can answer.  
 15 BY THE WITNESS:  
 16 A. The ASR, I think, has multiple issues.  
 17 Whether or not clamping was one of them, I'm not real  
 18 sure if I know that clamping was one of them. It  
 19 might be, though. It was a thin cup.  
 20 BY MR. DAVIS:  
 21 Q. Okay. Well, let's -- let's talk a little  
 22 bit about the ASR on Page 16.  
 23 You state in Page 38 that --  
 24 A. Paragraph 38 you mean?

1 ASR we perform much better. I don't recall the  
 2 revision rates of the Durom, but that varies depending  
 3 on which timeframe you are talking about, before or  
 4 after the recall.  
 5 Q. The 2008 recall?  
 6 A. I believe that's when it was.  
 7 Q. Yeah.  
 8 Do you believe that the Biomet  
 9 metal-on-metal devices perform better than the Wright  
 10 Conserve?  
 11 A. I have not -- I have not dug into the  
 12 Wright Conserve performance, so I don't know the  
 13 answer to that one.  
 14 Q. Have you ever looked at the performance of  
 15 the ReCap verse (sic) the Smith & Nephew Birmingham  
 16 device?  
 17 A. I've seen data on that one, so.  
 18 Q. Do you have an opinion or a recollection  
 19 of how the ReCap performed relative to the Birmingham?  
 20 A. My recollection is they performed very  
 21 similar to each other. There may have been slight  
 22 differences, but similar.  
 23 Q. Are you aware that the Birmingham hip has  
 24 been recalled?

1 Q. I'm sorry. Paragraph 38, Page 16, that  
 2 Biomet's metal-on-metal hips were different from the  
 3 hips of other manufacturers, including the hips  
 4 designed by DePuy and Zimmer that were the subject of  
 5 product recalls.  
 6 I don't see any supporting references  
 7 there. Is it safe to assume that you're referring to  
 8 the DePuy ASR and the Zimmer Durom?  
 9 A. Yes.  
 10 Q. Okay. You say here that Biomet devices  
 11 are designed differently, configured differently, and  
 12 they perform differently, right?  
 13 A. Yes.  
 14 Q. Do you believe that the Biomet devices  
 15 are -- overall they've been better performers than  
 16 other metal-on-metal hips designed by other companies  
 17 on average?  
 18 A. On average, yes.  
 19 Q. Would that include revision rates?  
 20 A. Well, it depends on which revision rates  
 21 you -- you go to. So I believe they still perform  
 22 equivalent or better.  
 23 Q. In general?  
 24 A. In general. I do know that for the DePuy

1 A. I am aware that one or two sizes of the  
 2 Birmingham hip have been recalled.  
 3 Q. And -- and -- and that it is no longer  
 4 indicated for use in female patients of -- of any  
 5 size?  
 6 A. I didn't know that one.  
 7 Q. Okay. Are you aware that it was also  
 8 recalled for all men over the age of 65?  
 9 A. Nope.  
 10 Q. Okay. Do you believe that the -- the --  
 11 the ReCap, if it's a -- a device that performs similar  
 12 to the Birmingham, should have been subject to a  
 13 recall?  
 14 MR. CONWAY: Objection; lack of foundation.  
 15 BY THE WITNESS:  
 16 A. I don't have any data to say if it would  
 17 have been or should have been or should not have been.  
 18 There was no data. The -- that recall notice or -- is  
 19 based off of clinical performance.  
 20 MR. DAVIS: Let's -- you know, this might be a  
 21 good stopping point for me. Maybe we can get that  
 22 binder and --  
 23 MR. CONWAY: Yeah.  
 24 MR. DAVIS: -- take a five-minute break.